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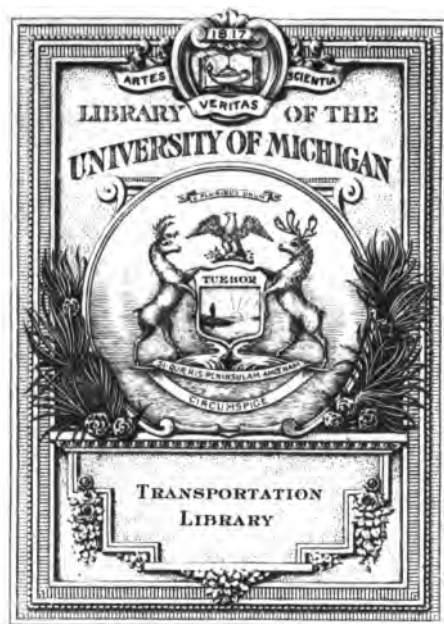
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Savannah, Ga.

SAVANNAH.

COMMERCIAL RELATIONS BETWEEN THE
WEST AND SAVANNAH.

COMMERCIAL HISTORY OF SAVANNAH.

PLEAS FOR DEEP WATER AT SAVANNAH.

APPENDICES.

SAVANNAH:
BRAID & HUTTON, PRINTERS AND BINDERS.
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"I think the South is the most interesting field of study to be found at present in any part of the world. It is endowed by nature with greater advantages than any similar area in the world. It contains all the materials for new industries in great profusion. Its coal and iron are not only unlimited in quantity, but so placed in contiguity as to make their development both easy and profitable. The South has a practical monopoly of cotton, which now secures for her exchanges with the rest of the world to the extent of three hundred and fifty millions of dollars annually.* There is no country in the world, the industrial prosperity of which is planted on a foundation so stable as this. Georgia well deserves her title of 'Empire State of the South.'"

[*Extract from an interview with Hon. A. S. Hewitt.*]

*Now \$400,000,000 annually.

SAVANNAH.

Savannah is situated on a plateau about 45 feet high at the head of ocean navigation on the Savannah River, and is 18 miles by water from the sea.

It is in the 32° parallel of north latitude, and has an average annual temperature of about 66° F.

It is healthful, and is one of the handsomest and most desirable residence cities in the South. Its location and natural advantages as a commercial port are unsurpassed.

It was founded by Oglethorpe in 1733, and is now the most important city on the South Atlantic coast, having a population of about 50,000.

It covers an area of 4,000 acres, has an assessed property valuation of \$20,000,000, and had in 1890 an ocean commerce of \$152,813,000.

The city has 110 miles of streets, 65 acres of public parks, 25 miles of street railway, and nearly 5 miles of wharves, with more than twice that length of water front available and yet to be developed.

THE HARBOR OF SAVANNAH.

The Harbor of Savannah consists of the Savannah River from the city to Tybee Roads, and comprises an anchorage, with depths of 26 feet and upward, of 1,861 acres, which will be increased to 2,328 when the proposed improvements are completed. For a commercial port, however, a large area for anchorage is not demanded so much as abundant dock facilities with convenient

approaches. These Savannah possesses in an eminent degree, and the construction of docks at private and corporate expense will keep pace with the increasing demands of commerce. The Harbor has long been noted for its immunity from storms, and for the excellent quality of the river water, which will keep without deterioration in the holds of vessels for an indefinite length of time. The ocean bar is one of the deepest and best on the South Atlantic coast. The depth of water in the bar channel has not sensibly changed in a century, there being 26 feet at mean high tide.

In 1874, when the United States Engineer Department resumed charge of the improvement of the harbor, the usual high water draught of vessels to the city was about 14.5 feet. The improvements executed up to date have resulted in securing a navigable channel 22 feet deep at mean high tide from Savannah to the sea. On July 22, 1890, the Secretary of War approved a project having for its object the obtaining of a depth of 26 feet of water in the river from the city to the sea, and on September 19, 1890, Congress appropriated \$350,000 with which to inaugurate the work.

REVISED PROJECT OF IMPROVEMENT FOR SAVANNAH HARBOR AND
RIVER, WITH A VIEW TO OBTAINING A CHANNEL
DEPTH OF TWENTY-SIX FEET.

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., July 16, 1890.

GENERAL: I have the honor to send forward the report of Lieutenant Carter, dated June 30, 1890, with accompanying papers and maps, all relating to a revised project of improvement for the Savannah River near and below Savannah, Ga., with a view of obtaining a depth of 26 feet at mean high water from the city to the ocean.

This project and preceding survey are understood to be the result of the instructions of the Chief of Engineers, dated January 11, 1889. The work and the discussion of it are believed to be the best yet done for this river.

The project is approved, subject to such minor modifications as the progress of the work will surely suggest.

The estimate is also approved. If the money for the execution of the project were supplied as fast as it could be economically expended, the cost could be much reduced.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Colonel, Corps of Engineers.

Brig. Gen. THOMAS L. CASEY,
Chief of Engineers, U. S. A.

[First indorsement.]

OFFICE CHIEF OF ENGINEERS,
U. S. ARMY,
July 21, 1890.

Respectfully submitted to the Secretary of War.

The plan of improvement under which operations have been carried on up to date provides for the establishment of a channel from Tybee Roads to the City of Savannah practicable at high tide for vessels drawing 22 feet of water, and the widening of the channel of the river opposite the city to 600 feet, of uniform depth with the balance of the channel.

To comply with the provisions of the River and Harbor Act of August 5, 1886, a survey was made, under the direction of Col. Q. A. Gillmore, Corps of Engineers, of the "Savannah River from cross-tides above Savannah to the bar, with a view to obtaining 28 feet of water in the channel," and an estimate for the improvement was submitted amounting to \$6,660,000 (Annual Report Chief of Engineers, 1888, Part II., pages 1,059-1,073). As no action has been taken on this report, and a mean high-water depth of 22 feet being insufficient to accommodate the large and rapidly-growing commerce on the Savannah River, and the project for securing a depth of 28 feet requiring so large an expenditure, I directed Lieutenant Carter to prepare and submit a project with an estimate of the cost of obtaining a channel of 26 feet at high water, and it is in compliance with these instructions that the within project is submitted. It is recommended that the future operations on this river be directed to securing a depth of 26 feet, as within proposed, and that the project be amended in that particular.

THOS. LINCOLN CASEY,
Brig. Gen., Chief of Engineers.

[Second indorsement]

JULY 22, 1890.

The recommendations of the Chief of Engineers in his indorsement are approved.

L. A. GRANT,
Assistant Secretary of War.

PROJECT OF LIEUTENANT O. M. CARTER, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Savannah, Ga., June 30, 1890.

GENERAL: I have the honor to submit herewith a revised project of improvement for Savannah Harbor and River with a view to obtaining a channel depth of 26 feet at mean high water from the city to the sea. The basis of this report is formed by the project submitted by me under date of August 25, 1887, the revision having been made in the light of the information obtained by the survey executed under my direction in 1889 and 1890.

This survey was in charge of Mr. E. A. Gieseler, assistant engineer, and his reports and appendices, which are submitted herewith as a part of this report, give a full description of the methods employed and the results obtained.

Apart from the development of the present form of the river bed from Cross Tides to the sea, by means of careful and numerous soundings, the aims of the survey were in the main directed toward a systematic investigation of the tidal conditions, and of the ebb and flood flow in the various channels, and it appears that this object has been attained.

The result of the gauging operations as far as the volumes in motion under mean conditions of tide and of fresh water flow are concerned may be summed up as follows:

Nearly equal volumes of flood enter the two openings north and south of Oyster Bed, viz., respectively, about 1,100,000,000 and 1,000,000,000 cubic feet, about 300,000,000 cubic feet of the former passing off into Wright's River. Savannah River proper is entered by a flood volume of about 1,850,000,000 cubic feet, of which one-fourth passes into South Channel while three-fourths enter the mouth of North Channel at the lower end of Jones's Island. Immediately below St. Augustine Creek the flood volume of South Channel has diminished to about 180,000,000 cubic feet, but is increased immediately above the flood inflow of said creek to 414,000,000 cubic feet. The volume of North Channel at about the same distance from the mouth (center of Spirit Island) is 770,000,000 cubic feet, of which somewhat more than one-tenth moves through Duck Puddle. The head of Elba Island is reached with an entire flood volume in North and South Channels of about 1,100,000,000 cubic feet, of which amount about 760,000,000 cubic feet enter Back River and about 210,000,000 cubic feet enter Front River.

After having turned about 65,000,000 cubic feet over Cross Tides Dam into Front River the Back River flood arrives at Reeves plantation with about 125,000,000 cubic feet. The Front River flood has decreased to 114,000,000 cubic feet immediately below King's Island, but is increased by the inflow through Cross Tides to a volume of 140,000,000 cubic feet immediately above the latter place.

The ebb flow of Savannah River is increased by the accumulation of half a lunar day's fresh water flow, amounting to about 700,000,000 cubic feet. In Front River immediately above Cross Tides the ebb volume amounts to 856,000,000 cubic feet, of which nearly 600,000,000 cubic feet remains in Front

River, while about 300,000,000 cubic feet pass over the dam into Back River. The ebb volume of the latter which, $1\frac{1}{2}$ miles further up at Reeves plantation, is only 165,000,000 cubic feet is thus considerably increased, so that at the junction of Back River and Front River in the vicinity of Barnwell Islands it amounts to about 1,000,000,000 cubic feet, most of which doubtless passes through the opening south of the upper Barnwell Island. Front River, in the same vicinity, discharges about 700,000,000 cubic feet through the mouth of Wrecks Channel.

About the same amounts are turned respectively into North and South Channels, so that half way down Spirit Island we find a total volume of about 1,160,000,000 cubic feet for the two openings of the North Channel, and in the same vicinity, immediately above St. Augustine Creek, about 770,000,000 cubic feet in South Channel. The flow in the latter is then weakened to the amount of nearly 350,000,000 cubic feet, passing off through St. Augustine Creek and at its mouth near Lazaretto Creek; we therefore find a discharge of only about 870,000,000 cubic feet, while about 1,700,000,000 cubic feet are discharged through the mouth of North Channel at the lower end of Jones's Island, rendering in all an ebb volume at the two mouths of the river of about 2,570,000,000 cubic feet.

Finally about 1,450,000,000 cubic feet pass south and about 935,000,000 cubic feet pass north of Oyster Bed, in which latter is included a volume of about 300,000,000 cubic feet coming from Wright's River.

Such are the general outlines of the movement of volumes in the lower Savannah River as deduced from the present survey. As compared with former gauging operations a fairly good coincidence of results is found in the upper portion, while in the lower portion the present volumes are very considerably smaller than the former ones, possibly an indication of a decrease of the tidal volume and therefore a warning to proceed with the utmost caution in the construction of all future improvement works.

The effect of Cross Tides dam is strikingly illustrated by the above.

Previous to its construction two-thirds of the entire volume of Savannah River passed through Cross Tides into Back River, and only one-third passed down Front River. Now the situation is precisely reversed.

The relative size of volumes passing north and south of Oyster Bed is somewhat of a surprise, the importance of the northern opening being demonstrated by the survey to be much greater than was supposed. We should then proceed cautiously in the construction of such works as may be intended to partially close this opening.

The results of the survey appear to indicate that a mean ebb velocity of about 2 feet per second is required to secure permanence of the channel. The general aim of the revised project will be to mold the river bed from Cross Tides to the sea in such a way as to allow the free ascent of the flood tide, and to secure throughout, as far as practicable, the above uniform mean velocity of ebb flow. For Front River this leads us to cross-sectional areas for mean ebb outflow, in-

creasing from about 9,000 square feet at Cross Tides to about 12,600 square feet at the mouth of Wrecks Channel, while the widths (under the assumption of a uniform mean depth of 18 feet for mean service of ebb out-flow) should increase from 500 feet at Cross Tides to 600 feet at Kinzey's Point, and from 700 to 750 feet at the mouth of Wrecks Channel.

For North Channel the same assumption in regard to mean ebb velocity and mean depth leads to a general increase in widths from 1,200 feet at the head of Elba Island to 1,870 feet at Long Island Crossing, which, especially below, is more than the present widths between wing-dams.

In view of the foregoing the following plan of improvement is submitted :

The enlargement of Drakie's Cut as indicated in the original project.

The entire or partial removal of King's Island with a view of turning additional volumes into Front River and thereby somewhat increasing the velocities.

The construction of a deflecting jetty from Argyle Island.

The partial removal of Marsh Island and closing of the channel north of it, with a view of throwing the entire flow into the enlarged southern channel and thus doing away with the disadvantages incident upon two channels. Besides this the area of the abandoned channel will furnish a convenient dumping ground.

A training wall from the lower end of Marsh Island to Kinzey's Point and the widening of the unduly contracted region below Kinzey's Point.

A training wall in the vicinity of Garden Bank in order to properly contract the river there.

Spur jetties or bank protection in the lower portion of Wreck's Channel for the same purpose.

Besides the dredging required to open up the river as discussed above, a channel 26 feet deep at mean high water from the city water works to the sea is provided for.

A deflecting jetty running out toward South Channel from Mackey's Point in order to divert a greater ebb volume into North Channel.

The removal of a portion of Dam 15.

The closing of Duck Puddle in order to render permanent the improvement of North Channel near the lower mouth of Duck Puddle. The construction of training walls and shore protection in the concave bend near Spirit Islands and between wing dams in North Channel, with a view of obtaining a strong ebb flow of uniform mean velocity throughout.

Training walls and shore protection between the Lower Flats and Oyster Bed.

Dredging south of Oyster Bed with a view of obtaining cross-sectional areas of about 45,000 square feet for mean ebb outflow, in order to induce a stronger flow through the southern opening and thence over Tybee Knoll.

In pursuance of the same object it may become necessary to close the northern opening, either by continuing the present jetty, No. 31, to the shore, or by

building a training wall from Long Island Flats to Oyster Bed ; further, to construct a training wall running easterly from the lower end of Cockspur Island and finally to extend and raise the Oyster Bed training wall. For the successful accomplishment of this improvement great freedom of action should be allowed the local engineer, the necessity for the various works and their execution being accompanied and guided by continued careful investigations of the influence exercised by the completed portions.

Above Cross Tides :

ESTIMATES.

Drakie's Cut—

160,000 cubic yards dredging at 15 cents per cubic yard.	\$24,000
800 linear feet of training wall, at \$8 per foot.	6,400
	<hr/> \$30,400

Cross Tides to Fort Oglethorpe :

12,800 linear feet of training wall, at \$8 per foot.	102,400
1,400 linear feet of shore protection, at \$8 per foot.	11,200
Partial removing of King's Island—770,000 cubic yards dredging, at 15 cents per cubic yard.	115,500
Partial removal of Marsh Island—500,000 cubic yards dredging, at 15 cents per cubic yard.	75,000
City Water Works to Vale Royal Mills, to open up cross-sections to the required size and to obtain a channel 300 feet wide and 26 feet deep at mean high water—700,000 cubic yards dredging at 15 cents per cubic yard.	105,000
Vale Royal Mills to Fort Oglethorpe, as above—2,000,000 cubic yards dredging, at 15 cents per cubic yard.	300,000
Possible land damage to Hutchinson's Island.	45,000
	<hr/> 754,100

Fort Oglethorpe to Oyster Bed :

Mackey's Point training wall—

1,080 linear feet of log and brush mattress jetty—30,000 square yards of log and brush mattresses at 60 cents per square yard.	18,000
4,500 cubic yards of stone at \$3.50 per cubic yard.	15,750
51,150 linear feet of training wall, at \$10 per foot.	511,500
8,000 linear feet of shore protection, at \$10 per foot.	80,000
3,000 linear feet of shore protection, at \$15 per foot.	45,000
Extending dams Nos. 27 and 35 to shore—1,800 linear feet of pile dam at \$10 per foot.	18,000
Obstructions—To open cross-sections to the required size and to obtain a channel 400 feet wide and 26 feet deep at mean high water—250,000 cubic yards dredging, at 15 cents per cubic yard.	37,500
Upper flats, as above—330,000 cubic yards dredging, at 15 cents per cubic yard.	49,500
Lower flats, as above—885,000 cubic yards dredging, at 15 cents per cubic yard.	57,750
Long Island crossing to Oyster Bed, as above—900,000 cubic yards dredging at 15 cents per cubic yard.	135,000

Oyster Bed to Tybee Roads :

968,000

Oyster Bed training wall—raising it $2\frac{1}{2}$ feet above mean low water mark and extending it to Tybee Roads; constructing south training wall to a height of mean low water;

200,000 square yards of log and brush mattresses, at 60 cents per square yard.....	120,000
210,000 cubic yards of stone at \$3.50 per cubic yard.....	735,000
16,600 cubic yards of stone, at \$5 per cubic yard.....	83,000
Oyster Bed shoal to open up cross-sectional areas to required size—2,205,000 cubic yards dredging at 15 cents per cubic yard.....	330,750
Tybee Knoll, as above, and to secure a channel 400 feet wide and 26 feet deep at mean high water—751,000 cubic yards dredging, at 15 cents per square yard.....	112,650
	<hr/> 1,381,400
	3,133,900
In case the total removal of King's Island is decided upon, the volumes to be dredged will be increased by 730,000 cubic yards, which, at 15 cents per cubic yard, equal.....	109,500
	<hr/> 3,243,400
Engineering and contingencies, 10 per cent.....	324,340
	<hr/> 3,567,740
Total	3,567,740

The estimated cost of the above improvement is, in round numbers, \$3,500,000. These estimates are made upon the supposition that funds sufficient for advantageous prosecution of the work will be regularly supplied.

Respectfully submitted.

O. M. CARTER,

First Lieutenant, Corps of Engineers, U. S. A.

Brig. Gen. THOMAS L. CASEY,

Chief of Engineers, U. S. A.

In the execution of the foregoing project there are no uncertain problems with which to deal, such as arise when the improvement of an ocean bar is contemplated. The river alone needs improvement, and the desired results can be obtained within the limits of the estimated cost.

The present wharf frontage of Savannah Harbor is 5 miles, but there remains available and yet to be developed nearly twice as much more within the city limits, while the whole water front on both sides of the river from the city to the sea can be utilized if necessary.

It is a very important fact that Savannah is upon fresh water, as vessels frequenting that port are only docked for repair and not for cleaning bottom. The

absence of barnacles, which form in salt water ports, is enough to make material difference in the speed of vessels plying from that port and from other ports near by, but less favorably situated. In salt water, vessels of iron or steel quickly corrode, and those of wood are soon destroyed by the ship worm. There is no point which so quickly commends itself to ship owners as that vessels can lie, while loading, in fresh water. In fresh water, moreover, wooden docks and other structures below low water are imperishable; above that plane repairs can be easily and cheaply made. In salt water, in these latitudes, the activity of the ship worm (*teredo*) would render the use of stone or other expensive material imperative.

COMMERCIAL RELATIONS BETWEEN THE WEST AND SAVANNAH.

The improvements which have already been made in Savannah Harbor have justified the extension of lines of railway into the interior, thus opening to many places markets for their products, which before did not exist.

The Savannah, Florida and Western Railway System, embracing over 900 miles of railroad in Georgia, Florida and Alabama, with nearly 1,000 miles of steamboat and steamship lines tributary thereto, depends largely for the shipment of its freight upon the facilities offered by the port of Savannah.

Through the Central Railroad System of Georgia, with about 2,000 miles of railway in the States of Georgia, Alabama, Mississippi and parts of South Carolina, the

richest timber, cotton, coal and iron districts of those States find an outlet at Savannah to the sea.

This large system, with its steamship lines, is now operated by the Richmond and Danville Railroad Company, and it now makes available, with the Kansas City, Fort Scott and Gulf, the Union Pacific and the Missouri Pacific railroads, working in harmony, through trunk lines from the Pacific to the Atlantic coast, with the advantage over the great northern trunk lines of a much shorter mileage, of easier grades, and of an entire immunity from snow and ice blockades during the winter months.

The Savannah, Americus and Montgomery Railway, giving an air line to Montgomery and the Southwest, entered Savannah about a year ago.

The South Bound Railroad will be completed to Columbia, South Carolina, during the present year, and will open a short and independent route to the north, and bring to Savannah large volumes of business which was formerly carried to other ports.

The Macon and Atlantic Railway, an air-line from Macon to Savannah, is now under construction, as is also the Middle Georgia and Atlantic Railway, which latter will afford an air-line from Savannah to Atlanta, Chattanooga and the West, and which owns in the city of Savannah facilities for terminals, shipyards and docks unsurpassed in the South.

The figures in the following table of distances are taken from the Official Railway Guide, and show the minimum railway mileage between the respective places over existing lines:

TABLE OF RAILWAY DISTANCES.

	Boston.	New York.	Baltimore.	Norfolk.	Savannah.	In favor of Savannah over New York.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Portland, Ore	3,172	3,225	3,166	3,224	3,138	87
San Francisco, Cal	3,358	3,269	3,210	3,306	3,168	101
Omaha, Neb.	1,491	1,402	1,343	1,411	1,315	87
Salt Lake City, Utah.	2,595	2,506	2,447	2,505	2,386	120
Kansas City, Mo.	1,463	1,342	1,303	1,279	1,159	183
St. Louis, Mo	1,185	1,065	1,020	996	903	162
Memphis, Tenn	1,447	1,234	1,020	980	672	562
Nashville, Tenn.	1,201	1,052	870	821	583	469
Chattanooga, Tenn.	1,137	924	719	670	432	492
Birmingham, Ala	1,255	1,042	855	712	421	621
Montgomery, Ala.	1,263	1,050	863	720	359	691
Atlanta, Ga.	1,038	875	688	545	294	581

From the above table it will be seen that St. Louis, Kansas City, Omaha, and other centers for the distribution of food products, as well as Chattanooga, Birmingham, and other important points in the mineral section of the South are many miles nearer to Savannah than to any of the northern seaports.

The comparison in favor of the Gulf ports from some of the points named is still more favorable, but the greatly increased water mileage from ports on the Gulf Coast* to Europe or to the North Atlantic ports, and the heavy marine insurance around the dangerous capes of Florida have already favored the commerce of the South Atlantic ports at the expense of the Gulf ports, and the tendency in that direction is likely to increase.

*The average run from Savannah to Liverpool, by sailing vessel, is ten days less than from New Orleans.

The improvements heretofore executed in Savannah Harbor and the expectations of further improvements yet to be made have been the inducements to develop the railway systems before mentioned. The sections of country made tributary to Savannah by those railways are among the richest in the United States, both agriculturally and in mineral wealth, and to enable the port to furnish an outlet to the rapidly-growing commerce offered to it from the interior deep water is more than ever needed. The increase in the depth of water in the harbor has not kept pace with the increased commercial demands, and many articles, such as grain, which require deep draught vessels, have to be refused by the railways terminating at Savannah, because of insufficient depth of water to float grain-laden ships.

There are now twelve regular packet steamers, ranging from 2,000 to 4,000 tons register each, plying between Savannah and Northern coastwise ports. Those steamers make 34 arrivals and 34 departures each month, and each foot of increased depth in the river will allow each one of those vessels to carry on an average 200 tons more freight on each trip.

Deeper water would permit the establishment of regular lines of foreign steamers, and by allowing entrance to a larger class of vessels, secure important reduction in foreign freight rates.

Such increased facilities for navigation as have been offered by the improvements already executed have resulted, according to the report of the Engineer in charge of the harbor, in *an annual saving in freights alone of more than the total sum of money expended by the United*

States upon the harbor; and there is every reason to believe that money expended in the further improvement of the harbor would yield a still more valuable return.

The assessed valuation of property in the city of Savannah for 1889 is more than \$5,500,000 greater than for the preceding year. Within the last two years a number of new industries have been established in Savannah, employing a total capital of more than \$5,000,000. The total bank capital of Savannah, including the Central Railroad & Banking Company, was, in 1890, \$11,203,338, an increase of \$938,685 over the preceding year. The Ocean Steamship Company has lately invested \$1,000,000 in two new steamships for its line, and is now ready to build three more. The wharves of this company are being entirely remodeled, trebling their capacity. The naval stores trade of this corporation has also, within the year, doubly outgrown its facilities, and new store-houses are being constructed.

Had the depth of water in the harbor been sufficient to enable suitable vessels to enter, a large amount of grain would have been exported, and the cotton exports for the present year would probably have been increased by more than 300,000 bales.

The Engineer in charge of the improvement of the harbor states that the system of irregular and inadequate appropriations which has prevailed in the past has increased the cost of the work in many instances more than one hundred per cent. In addition to this increased cost the commerce seeking an outlet at Savannah is very much embarrassed by the want of a sufficient depth of water, as has before been shown.

The principal demand for the surplus agricultural products of the Southern, Western and Northwestern States and Territories comes from the States of the Atlantic Seaboard and the countries of Europe.

Although, as we have previously seen, Kansas City is nearer to Savannah than to New York by 183 miles ; than to Boston by 329 miles ; than to Baltimore by 144 miles ; and although Savannah possesses warehouses, depôts, compresses, elevators and other facilities for transportation, storage and transfer superior to those of any other port south of the capes of the Chesapeake, nearly all direct shipments of grain and other food products destined for Europe and for the Atlantic Seaboard States have hitherto been made over longer rail hauls through Northern ports, because of the inadequate depth of water to be found at South Atlantic ports.

The transportation of food products affords a larger volume of commerce to the Northern trunk lines of rail way and to ocean vessels than the transportation of any other product of the United States. Those commodities cannot be carried economically by water except in ships of great tonnage and draught, which cannot ply to Savannah until the proposed improvement of her harbor is completed.

Savannah is especially favorably situated with respect to the West Indies and the Americas South of us, being many miles nearer than any of the northern ports, and nearer, also, than the principal Gulf ports. In the development of commerce between the United States and those countries Savannah is destined, therefore, to play an important part.

The question of deep water at Savannah is not, therefore, a local one, but one that affects the commerce of the whole country, both internal and foreign, and in justice to the people of Georgia, South Carolina, Florida, Alabama, Mississippi, Tennessee, Missouri and the entire West and Northwest, the total amount of money necessary to give a depth of 26 feet of water at mean high tide from the city of Savannah to the sea—thus enabling deep water vessels to reach that port—should be appropriated by Congress at the earliest practicable date.

There is probably no other work of river or harbor improvement in the United States where the benefits to the public for the amount of money invested have been so great as at Savannah, so that as a purely business investment the further improvement of the harbor is urgently demanded.

The early completion of the improvement of Savannah harbor will affect the welfare of the entire country, without reference to section, since it will operate to reduce the cost of transportation of food products and raw materials to the Atlantic States and to foreign ports, and will facilitate the distribution of manufactured articles, diminish their cost to the consumer, and increase their market range.

SAVANNAH'S COMMERCIAL HISTORY.

For nearly half a century Savannah has been the principal *entrepôt* of the States of Georgia, Florida and a large portion of South Carolina.

While Savannah, from the earliest days, has been an important trading point, her true commercial history may be said to date from about 1822. From authentic records it appears that the receipts and exports of cotton and rice at the port of Savannah for the year 1822-'23 amounted to the following :

Cotton, bales,	105,261
Rice, tierces,	11,232

With frequent variations, but continually increasing, the commerce of Savannah grew, until in 1843 there were exported 285,754 bales of cotton ; 25,032 tierces of rice ; 7,500,000 feet of pitch pine lumber ; 5,175,000 cypress shingles and 66,000 oak staves.

In 1847 Savannah began to feel the effects of railway communication with the interior, the Central Railroad of Georgia having recently been completed and placed in successful operation. In February of that year the value of the exports alone exceeded that in the same month of the previous year by \$840,000. The increase continued, the total value of imports and exports just prior to the civil war amounting to \$26,000,000 annually.

The exports in 1872 amounted to nearly \$40,000,000 and the imports to \$33,000,000. In 1886 the value of the combined exports and imports amounted to more than \$102,000,000. Those values were increased in 1890 by 50 per cent., the receipts and shipments of that year aggregating in value \$153,000,000.

By reference to the appendices hereto it will be seen that both the foreign and domestic trade of Savannah has shown a steady growth since the harbor improvements at that point were begun in 1873.

It is now the largest port on the South Atlantic coast, having an annual commerce of \$153,000,000, or about as much as all the other South Atlantic ports combined.

It is the third port in the United States in the value of its exports, the second cotton port of America and the first naval stores port of the world.

The exports of cotton have risen from less than 500,000 bales in 1872 to 1,139,608 bales in 1891.

The increase in the value of the annual exports of naval stores is still more remarkable, considering that from a value of less than \$50,000 in 1873 it reached a total of more than \$6,223,000 in 1891, with prospects of a still greater increase in the future.

The annual value of the exports of timber and lumber within the past fifteen years has risen from less than \$500,000 to more than \$1,500,000, the prices during that time having diminished by about 50 per cent.; that of fruits and vegetables from less than \$500,000 to more than \$3,500,000; that of pig iron from about \$25,000 to more than \$1,500,000; while that of cotton seed oil, a manufacturing industry about five years old, reached last year a value of nearly \$1,000,000.

The movement of commercial fertilizers by the railway lines leading from Savannah amounted during 1890 to more than 150,000 tons, of which about 50,000 tons were manufactured in Savannah.

While the volume of exports has thus increased, and the tonnage registered at the custom house has grown from 1,074,367 tons in 1873 to 1,828,614 tons in 1890, the number of vessels entered and cleared during that

period has increased by only 116, from the fact that the increased depth of water in the river allows vessels of much greater tonnage to visit the port than in former years, and coastwise and foreign steamers of great capacity have largely replaced the small sailing vessels which 18 years ago carried the great bulk of Savannah's commerce. Before the harbor improvements were begun the usual high water draught from the city to the sea was about 14½ feet. At present vessels of from 21 to 22 feet draught are able to go from the city to the sea on a single tide.

By permission of the Chief of Engineers, U. S. A., the following extract is taken from the report of the Engineer in charge of Savannah Harbor for the fiscal year ending June 30, 1891 :

[EXTRACT FROM CAPT. CARTER'S ANNUAL REPORT.]

The commerce of Savannah, which has rapidly increased consequent on the improvement of the harbor, has continued to grow, amounting during the past calendar year to \$153,000,000, and bidding fair to exceed during the present that of any former year.

The entrance into Savannah of the Savannah, Americus & Montgomery Railway was mentioned in my last annual report. This year will witness the completion of the South Bound Railway, which will open to Savannah a short and independent route to the North. Two new railroads, the Macon & Atlantic and the Middle Georgia & Atlantic, both now under construction, will, it is expected, soon be running their trains into Savannah.

The Central Railroad of Georgia recently added to its already large system 247 more miles, making a total mileage on June 1, 1891, of 1,550 miles. This system, as well as the Carolina system of about 300 miles, the auxiliary roads and the Ocean Steamship Company's lines are now operated by the Richmond & Danville Railroad Company. It now forms, with the Union Pacific and the Missouri Pacific railroads, practically under one ownership, a through trunk line from the Pacific coast at Portland, Oregon, to the Atlantic seaboard at Savannah, coördinate with the great Northern trunk lines, and with the advantage of being shorter by some two or three hundred miles and less subject to snow and ice blockades during the winter months than the more northerly lines.

The Alabama Midland Railway having passed into the control of the Savannah, Florida & Western Railway has added 150 miles to that system, making a total mileage of over 900 miles, while steamboat and steamship lines covering nearly 1,000 miles are also embraced in this system. The Savannah, Americus & Montgomery Railway and the Savannah & Western Railway are also extending their lines.

In addition to the railroads, the Savannah River, navigable as far as Augusta, a distance of 202 miles by the river, for boats drawing from 4 to 5 feet of water, affords another means of communication with the interior, and a number of small steamers and sailing craft ply the inland route along the adjacent coast, gathering the products of the sea and rice from the plantations, for transshipment at Savannah.

These avenues of commerce bring to Savannah the cotton, lumber, naval stores, farm and mineral products of large portions of the States of Georgia, South Carolina, Florida, Alabama and Tennessee, as well as other classes of through freights from the West and Northwest.

Regular lines of steamships have been established between this port and Boston, New York, Philadelphia and Baltimore. The table given below shows the number of steamships in these lines, the number of voyages made and the tons of freight carried by them. The last item has increased nearly 13 per cent. of its value for the previous year. The passenger traffic on these lines has also increased, 11,867 persons arriving and 12,425 departing, during the calendar year of 1890.

A large fleet of vessels is also engaged in the coasting trade. About one-third of the exports goes to foreign ports, and in this foreign trade are engaged many foreign steamers and sailing vessels of large draught and tonnage.

Vessels entering the port are now limited to a draught of from 21 to 22 feet. During 1890 the greatest draught taken from the city to the sea on a single tide was the British barque *Nellie T. Quest*, drawing 20 feet and 9 inches, while the steamship *Capulet*, drawing 20 feet, came from the city to the sea on a single tide. Recent work has somewhat increased the navigable depth.

The extension of the connection of existing railroads, the construction of new lines centering in Savannah, and the creation of greater facilities for the handling and transshipment of freights will cause to be brought to Savannah in the near future a constantly increasing volume of commerce seeking an outlet to coastwise and foreign ports. The chief exports, cotton, lumber and naval stores, are bulky freights and cannot be carried economically by light draught vessels under either steam or sail. Moreover, the value of the high speed of the steamships on the lines between Savannah and the Northern ports is partially neutralized by their being compelled to wait for a stage of tide at which they can safely enter or leave the harbor.

Savannah's cotton receipts for the season beginning September 1, 1890, reached on June 30, 1891, 1,115,704 bales, making her the only city in the world, with the exception of New Orleans, which has received and shipped over

1,000,000 bales of cotton in one season.* By estimating the receipts for the remaining months of the season on the basis of those during the same months of previous years, the probable total receipts for the present season are placed at 1,250,000 bales. The table of cotton receipts at Savannah for each season since 1872, given below, shows the steady increase in the number of bales received from year to year and the very rapid increase during the past three seasons. In the care of the cotton received and in facilities for its shipment it is asserted that Savannah stands unrivaled. Savannah, therefore, still maintains her position as the second cotton port in the country, and continues the greatest naval stores port in the world. Of the latter commodity there were received at and shipped from this port during the year ending March 31, 1891, 196,227 barrels of spirits of turpentine and 770,311 barrels of rosin. Immense quantities of lumber are also received here for shipment, the output during the year being estimated at 107,371,084 feet. Phosphate rock from the Florida mines is already being brought to Savannah for shipment to foreign ports.

Past improvement of the harbor has resulted in increasing the available depth at high water from about 14.5 feet to from 21 to 22 feet. The increase in the value of exports since the year 1873, when the work was begun, is proportional to the cube of the increase in the depth of water during the same period. If the same proportion should hold till a depth of 26 feet is reached the value of exports alone would then be about \$150,000,000. The annual saving in freight rates alone due to the increased depth amounts to more than the total sum of money expended by the United States upon the harbor. Rates of marine insurance have also been reduced.

PLEAS FOR DEEP WATER AT SAVANNAH.

The people of the State of Georgia, realizing the imperative necessity for a deep water harbor on the South Atlantic coast, the General Assembly of that State on September 12, 1891, passed the following preamble and resolutions :

WHEREAS, It is of vital importance to the people, not only of this State, but of the entire South and West that there should be a deep water port on the South Atlantic coast, through which may pass, over railroads of easy grades, unobstructed by snow and ice, the vast and rapidly growing commerce of this section, much of which is now, on account of an insufficient depth of water, compelled to seek, with long and expensive rail hauls, northern ports; and,

WHEREAS, There is at Savannah, Ga., a port where ships may lie secure from storms in fresh water; a port which has already a depth of 22.5 feet at

*Galveston has since received more than 1,000,000 bales in one season.—O. M. C.

mean high water from the city to the sea; a port where, due to the increased depth of water already obtained by the United States, there is saved annually to the producers and consumers of this section a sum greater than that expended by the United States upon the harbor since the formation of the government; a port whose ocean commerce in 1890 amounted to \$153,000,000, a gain of \$38,000,000 over the preceding year; a port whose terminal property alone is worth over \$10,000,000, and which has now regular lines of steamers plying to the principal Northern ports, the second cotton port of the United States and the first naval stores port of the world; and,

WHEREAS, The United States has already entered upon the improvement of the harbor, the immediate completion of which is demanded alike by the commerce and navigation seeking it, and by the economy of construction to be gained in vigorous and continued work; and,

WHEREAS, The importance of this great work commends itself to the encouragement and support of the whole State as being instrumental in contributing greatly to its commercial welfare; therefore, be it

Resolved, By the General Assembly in joint session, That the members representing Georgia in both houses of Congress be and they are hereby urged to do all in their power to enact such legislation as will bring about the speedy completion of the work which the government has already undertaken.

Resolved further, That a copy of the above be forwarded to the secretary of the Senate and the clerk of the House and to each senator and representative in Congress.

Resolved further, That the thanks of the General Assembly are hereby returned to Hon. Pat Calhoun for his able address on this subject.

On October 5, 1891, the same body passed the following resolutions :

WHEREAS, The General Assembly of the State of Georgia did on the 12th day of August, 1891, in joint session assembled, adopt a preamble and resolutions reciting

“That it is of vital importance to the people, not only of this State, but of the entire South and West that there should be a deep water port on the South Atlantic coast, through which may pass over railroads of easy grades, unobstructed by snow and ice, the vast and rapidly growing commerce of this country, much of which is now, on account of an unsufficient depth of water, compelled to seek, with long and expensive rail hauls, Northern ports, and,

“That there is at Savannah, Georgia, a port where ships may lie secure from storms in fresh water; a port which has already a depth of 22.5 feet at mean high water from the city to the sea; a port where, due to the increased depth of water already obtained by the United States, there is saved annually to the producers and consumers of this section a sum greater than that expended by the United States upon the harbor since the formation of the government; a port whose ocean commerce of 1890 amounted to \$153,000,000, a gain of

\$38,000,000 over the preceeding year; a port whose terminal property alone is worth over \$10,000,000, and which has now regular lines of steamers plying to the principal Northern ports; the second cotton port of the United States and the first naval stores port of the world, and,

"That the United States has already entered upon the improvement of the harbor, the immediate completion of which is demanded alike by the commerce and navigation seeking it and by the economy of construction to be gained in vigorous and continued work; and calling upon the members representing Georgia in both houses of Congress to do all in their power to enact such legislation as would bring about the speedy completion of this great work which the general government has already undertaken;" therefore, be it

Resolved by the Senate, the House concurring, That His Excellency, the Governor of Georgia, be and is hereby directed to communicate this action to the Governors of the States of Alabama, Florida, Mississippi, Louisiana, Texas, Arkansas, Tennessee, Kentucky, Ohio, Missouri, Indiana, Illinois, Kansas, Nebraska, Iowa and Wisconsin especially, as more directly interested in having a route opened to the Atlantic Ocean through a Southern port possessing the advantages of Savannah, and to all the States as a work calculated to benefit the whole country, and ask the Governors of each of said States to lay the matter before their respective Legislatures with their official endorsement, requesting their respective Legislatures by resolution to call upon their Senators and Representatives in Congress to aid and support by their influence and votes the Senators and Representatives from Georgia in their efforts to secure an adequate appropriation to enable the general government to at once vigorously prosecute to completion the work undertaken and already begun by them at Savannah, Georgia, as demanded by the commerce of the whole country.

Resolved further, That the State of Georgia and her citizens will ever hold in appreciative remembrance and recognition any coöperation and assistance rendered by sister States in support of her Representatives in Congress in their work for obtaining an appropriation commensurate with the magnitude of the work and necessity for speedily securing deep water at the port of Savannah, for the general good, as well as the special development of a needed South Atlantic port.

Georgia is building up in every direction. Immigration is pouring in from the Northern States. The character of this immigration is such that it builds up not only diversified agriculture, but manufactures of various character.

The success of these enterprises within the last few years has been phenomenal, as is attested by the enormous increase in wealth and appreciation in value of real estate.

From the report of the Comptroller-General of Georgia for 1890 it is seen that the entire taxable property of the State, exclusive of railroads, from 1879 to 1890, has increased by \$153,573,365, while the railroad property has increased during the same period by \$27,457,949.

Values upon which taxation is based are, in Georgia, very low, yet within the last ten years city and town property has increased 112 per cent.; cotton mills, 445 per cent.; iron works and foundries, 197 per cent.; banking capital, 158 per cent., and taxable railroads, 299 per cent.

The Alabama coal fields, considering their geographical position, their physical characteristics, the superior quality of their products and the cheapness with which the coal can be mined and transported, constitute the only source of supply in the whole world which can successfully compete with British coal in the Gulf, the West Indies and South America. The growing development of the resources of Georgia and Alabama is only typical of the rapid development of the entire South and West, which demand, and must have at an early day, an adequate outlet to the sea on the South Atlantic coast at Savannah.

J. J. McDONOUGH,
Mayor of Savannah.

APPENDICES.

COTTON.

NAVAL STORES.

TIMBER AND LUMBER.

RICE.

FRUITS AND VEGETABLES.

PHOSPHATES.

PIG IRON.

MANUFACTURES

COMMERCE.

APPENDICES.

COTTON.

The first bale of cotton shipped from Georgia was exported from Savannah in 1788 by Thomas Miller, who was for a long time the only purchaser of cotton in Savannah. He bought it in parcels of 100 pounds and less and assorted and packed it with his own hands. His exclusive and earnest attention to this branch of business earned for him the sobriquet of "Cotton Miller."

It is reported that as early as 1739, about the time efforts were being made to bring the article to a state of perfection in South Carolina, one bag of cotton was exported from Savannah.

Up to the year 1882 Savannah ranked next to New Orleans as a cotton port. That position she lost for one year—giving way to Galveston—but regained it the next year, and still holds it. The receipts at Savannah for the year just closed amounted to 1,139,608 bales. The cotton crop of the United States for 1890-1891, the season just closed, was the largest ever raised, 8,631,568 bales being received. Of this Savannah received more than 13 per cent. The cotton crop of 1889-1890, the one previous to this, is the next largest on record, 7,311,322 bales being produced, of which Savannah secured 13 per cent., or 956,517 bales.

The following tabulated statement gives the receipts of cotton at the port of Savannah, from all sources, from September 1, 1890, to August 31, 1891, inclusive :

	UPLAND.	SEA ISLAND.
Central Railroad	792,938	12,388
Savannah, Florida & Western	252,726	28,453
Charleston & Savannah	22,643	6
Carts	407	1,583
Savannah River	17,294	23
Brunswick steamers	252	5
Florida steamers	793	293
Beaufort steamers	637	2,553
Miscellaneous	6,288	326
Total	1,093,978	45,630

The following tabulated statement shows the exports of cotton, foreign and coastwise, from the port of Savannah, from September 1, 1890, to August 31, 1891, inclusive :

	UPLAND.	SEA ISLAND.	UPLAND.	SEA ISLAND.
Charleston	47,393		517,373	21,348
Baltimore	84,649	460		
New York	278,062	18,508		
Boston	96,437	2,380		
Philadelphia	10,056			
New Orleans	450			
Brunswick	326			
Mill consumption	1,961			
Interior	600			
<i>Foreign—</i>				
Liverpool	106,395	20,062		
Havre	30,623	2,172		
Rouen	2,500			
Dunkirk	2,300			
Reval	39,250	100		
Bremen	189,595	100		
Amsterdam	22,257			
Genoa	57,541			
Barcelona	73,725			
Gothenburg	14,401			
Pasages	1,750			
Santander	1,448			
Oporto	6,200			

	UPLAND.	SEA ISLAND.	UPLAND.	SEA ISLAND.
Uddevalia.....	1,200			
St. Petersburg.....	5,300			
Norrkopping.....	8,100			
Lisbon.....	2,525			
Geffle.....	1,250			
Corunna.....	1,200			
Palma di M.....	12			
Salerno.....	1,200			
Ghent.....	3,875			
Pooteeloff Harbor.....	2,625			
			577,833	22,434
Grand total.....			1,095,206	43,782

Cotton receipts at Savannah from 1872 to 1891 :

SEASON ENDING AUGUST 31.	NUMBER OF BALES.	SEASON ENDING AUGUST 31.	NUMBER OF BALES.
1873.....	612,794	1883.....	817,670
1874.....	630,372	1884.....	655,749
1875.....	614,478	1885.....	728,087
1876.....	523,244	1886.....	803,359
1877.....	477,435	1887.....	804,412
1878.....	597,449	1888.....	892,318
1879.....	693,764	1889.....	823,168
1880.....	741,018	1890.....	956,517
1881.....	889,333	1891.....	1,139,608
1882.....	737,056		

Freight rates on cotton, by steam, to foreign ports
in 64ths of a penny, per pound, since the year 1879 :

MONTHS OF OCTOBER AND NOVEMBER.	Liverpool..	Bremen...	Havre.....	Reval.....	Genoa.....	Barcelona..	MONTHS OF OCTOBER AND NOVEMBER.	Liverpool..	Bremen...	Havre.....	Reval.....	Genoa.....	Barcelona..
1879.....	28	30		32			1885.....	19	20	21	22	24	23
1880.....	24	28					1886.....	18	19	20	20		22
1881.....	22	24		28			1887.....	18	19		22	23	22
1882.....	26	26	28	30	30	30	1888.....	28	28	28	32	32	30
1883.....	22	24	24	26			1889.....	24	25	26	28	28	28
1884.....	20	22		26		26	1890.....	18	18	20	23	25	...

The foregoing table shows the decrease in foreign freight rates during the period covered to be from 28 to 37 per cent. There have been set-backs, due to tempo-

rary causes, notably the one in 1888, from which the freight market has scarcely yet recovered; but on the whole the tendency is steadily downward.

NAVAL STORES.

Savannah has long been recognized as the leading naval stores market of the world. It will be many years before the pine forests—the source from which naval stores are drawn—are exhausted, and in the meantime the proportion of naval stores received at Savannah will steadily grow larger.

The development of Savannah's export trade in these articles has been remarkable. In 1872 the business was insignificant. In 1874 the shipments of rosin were 18,200 barrels, valued at \$59,029. From that year there has been a progressive increase, culminating in 1890, when the highest figures yet attained were reached.

RECEIPTS AND SHIPMENTS OF NAVAL STORES, PORT OF SAVANNAH.

COMMERCIAL YEAR.	RECEIPTS.			SHIPMENTS OF SPIRITS.				SHIPMENTS OF ROSIN.				TOTAL VALUE.	
	SPIRITS.			FOREIGN.		VALUE.		COAST- WISE.		VALUE.			COAST- WISE.
	ROSIN.			FOREIGN.		VALUE.		FOREIGN.		VALUE.			
	Barrels.	Barrels.	Gallons.	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.	Barrels.			
1880.	46,321	231,242	479,537			\$117,795	35,676	\$642,168	85,086	\$249,109	150,401	\$285,761	\$1,249,833
1881.	54,703	282,386	1,016,580			397,383	40,332	867,138	135,839	425,055	151,968	402,715	2,092,291
1882.	77,059	309,834	1,635,250			736,593	27,271	640,868	193,408	408,418	124,431	279,969	2,065,848
1883.	116,127	430,548	2,713,872			1,048,097	49,581	867,667	203,398	404,711	263,490	500,631	2,821,106
1884.	123,464	527,583	3,891,176			1,246,347	52,231	731,234	407,965	639,443	300,566	661,245	3,278,296
1885.	111,447	452,370	3,040,372			924,784	51,627	877,659	326,090	507,410	234,990	634,473	2,944,326
1886.	127,785	476,508	3,107,253			1,014,734	72,353	1,193,824	351,054	566,829	254,203	521,116	3,296,503
1887.	164,199	610,250	2,950,200			1,180,080	106,189	1,698,024	300,741	751,852	295,731	739,327	4,369,283
1888.	162,137	630,943	3,397,600			1,359,040	81,691	1,297,056	295,660	739,150	326,449	816,122	4,211,368
1889.	173,863	610,302	3,591,600			1,436,640	82,487	1,419,792	321,790	804,475	316,858	792,147	4,353,054
1890.	195,110	782,630	5,760,800			2,231,496	80,172	1,383,162	403,500	1,210,500	349,907	1,049,721	5,974,879
1891.	216,200	775,680	6,883,800			2,537,006	67,719	1,352,801	413,618	1,240,354	364,426	1,093,278	6,223,939

TIMBER AND LUMBER.

The quality of lumber shipped from Savannah is not excelled by that shipped from any Southern port. The lumber output during the year just closed was 107,371,082 feet. Notwithstanding the fact that exports of lumber to South America about ceased last year, owing to financial trouble and civil war, Savannah's exports were more than 3,000,000 feet greater than the year before.

RICE.

Savannah is the marketing place for the product of the rice plantations along the Savannah, Ogeechee, Altamaha and Satilla rivers in Georgia, as well as for that of a number of plantations along some of the rivers in South Carolina. The facilities for cleaning and handling the rice when it reaches Savannah are supplied by three large mills, the Planters', the Savannah and the Upper, all situated on the water front and affording to the various vessels engaged in the transportation of this staple, easy and economical means of handing their cargoes. Heavy freshets in the rivers and streams of the rice lands tributary to Savannah caused a shortage in the crop for 1890-1891, there being a reduction of about 33½ per cent. from the figures of the preceeding year. There were 166,600 barrels of rice of 300 pounds each milled on the South Atlantic coast during the past year; of this the mills at Savannah turned out 45,400 barrels. They were disposed of as follows:

SHIPPED TO	BARRELS, 300 LBS. NET.
New York.....	3,330
Baltimore.....	3,854
Boston.....	2,460
Philadelphia.....	1,664
Interior points.....	4,214
Local consumption.....	29,178
On hand.....	700
Total.....	45,400

FRUITS AND VEGETABLES.

The shipment of farm and garden products to the markets of the North through the port of Savannah practically began in 1872, when produce valued at \$490,000 was exported.

Those shipments have grown enormously since then, there being shipped for the year ending September 30, 1891, 804,707 packages of fruit, 467,039 packages of vegetables and 1,378,640 watermelons, of an aggregate value of more than \$3,500,000.

The expansion of this great industry (the cultivation of oranges, pears, watermelons, peaches, beans, cucumbers, tomatoes, cabbages and sweet and Irish potatoes for the Northern markets) is almost wholly attributable to the excellent facilities offered by the steamship lines to Boston, New York, Philadelphia and Baltimore, which enable the producers in Georgia, South Carolina and Florida to sell their crops at good prices in the North long before the snows have melted from the hills there.

The following table shows the exports of fruit and vegetables, by water only, to various Northern ports, for the year ending September 30, 1891 :

TO	FRUIT. PACKAGES.	VEGETABLES PACKAGES.	MELONS. NUMBER.
New York.....	520,800	385,239	1,044,607
Boston.....	188,334	20,494	282,816
Philadelphia.....	23,373	11,273	21,217
Baltimore.....	72,700	50,053	30,000
Total.....	804,707	467,039	1,378,640

PHOSPHATES.

Georgia is the largest manufacturer and consumer of phosphates in the United States. The manufacture of fertilizers at Savannah has steadily increased, there being manufactured during 1890 about 50,000 tons.

The first shipment of phosphate rock from Savannah to a foreign port was made during the latter part of 1890. Other shipments have since been made. New discoveries of phosphates are continually being made in Florida, and new fields are being opened as far north as the Georgia line. The output of the mines in Northern Florida must be shipped to Savannah for export. The Savannah, Florida and Western Railway has made provision to handle the rock at Savannah, a warehouse for storage having been erected and other improvements made.

PIG IRON.

Savannah is more advantageously situated for shipping the iron produced in Georgia, Alabama and Tennessee than any city on the South Atlantic coast. The Richmond and Danville Railroad and its connections, pierce the heart of and traverse the entire mineral region of the above-named States. In this region, the

elements entering into the production of pig iron—iron ore, coke and limestone—are found in great profusion and in close proximity, making it possible to manufacture iron in competition with any market in the world.

For the year ending September 30, 1889 the shipments amounted to 50,366 tons, valued at \$1,215,000. In 1872 the shipments of pig iron from Savannah, by water, amounted to but \$25,000.

MANUFACTURES.

Savannah offers extraordinary advantages for manufacturing. Directly tributary to the city are all of the elements that are necessary for a manufacturing centre. There are large tracts of unoccupied lands to be secured by rental or purchase upon easy terms. The State of Georgia is rich in ores and coal. Labor is abundant and cheap; living is economical; the climate is healthy; freight rates by rail to interior points and by water to northern and foreign ports are low. Savannah is nearer to the West Indies than any of the cities of the North. Sugar from the West Indies to be refined; hard woods from Georgia and adjacent States to be made into furniture; hides to be converted into leather; leather to be made into shoes; sea island cotton to be worked into the finest fabrics; phosphate rock to be converted into fertilizers; iron, steel, kaolin, dye stuffs, medicinal plants, gums, etc., form the basis of varied manufactures which Savannah, from her geographical position, is especially favorably situated.



Savannah has the raw cotton and the raw wool at her very doors. Oak and hickory for the manufacture of wagons and agricultural implements are close by in profusion.

Savannah is the most convenient and natural market for the great agricultural and cotton region, the people of which, at present, ship their raw products from home and later buy them back in their manufactured state at a greatly increased price.

No city in the United States possesses better advantages than does Savannah for the conversion of timber into merchantable articles. The finest furniture can be manufactured there, as there is no limit to the varied resources of the forest in the vicinity.

At present a number of manufacturing establishments is in successful operation, the output being valued at \$7,000,000 annually. A cotton mill, a knitting mill, cotton seed oil mills, agricultural implement works, steam bakeries, a brewery, ice manufactories, boiler works, machine shops, a brass foundry, brick manufactories, sash, door and blind manufactories, carriage works, cigar manufactories, fertilizer works, flour mills, grist mills, rice mills, planing mills, soap works, trunk factories and many other minor establishments are doing a thriving business and find a market for their products in the Southern States. An oyster canning factory is soon to be started and another large cotton factory is projected.

Ship railways and machine shops are in successful operation, and a dry dock, ship building yard and coaling station are projected.

